

Bat inventory at John Day Fossil Beds National Monument

by Lisa Garrett

BEFORE 2002, BIOLOGISTS HAD LITTLE knowledge about the bat species inhabiting John Day Fossil Beds National Monument in eastern Oregon. This lack of information made it difficult for resource managers to know how any of the bats were faring in the park. Thanks to funding from the Natural Resource Challenge, researchers from the University of Idaho, working under a cooperative agreement with the National Park Service, documented 14 bat species during the 2002 mammal inventory at the monument.

“The success of the 2002 bat inventory illustrates how well the Natural Resource Challenge is enabling the National Park Service to take a leading role in the preservation of North American biodiversity.”

The objective of the inventory was to document 90% of the potential mammal species in the monument. Special emphasis was placed on bats in 2002 because they comprise a significant proportion of the mammal species thought to reside in the monument. The inventory resulted in the documentation of all the species of bats expected to occur in eastern Oregon.

Inventory biologists sampled bats using mist nets and an ultrasonic detection system called AnaBat to identify bats by echolocation calls. The AnaBat II Bat Detector is part of a system that records the signals of bats for computer analysis. The ultrasonic echolocation signals of bats are converted by the system into electronic signals that can be recorded and processed to assist with the identification of the species. Biologists identified bats captured in mist nets and recorded their echolocation calls as the bats were released and flew overhead. Biologists used this library of

recorded calls to compare the calls of bats that were recorded but not captured with calls emitted from positively identified bat species.

The pallid bat (*Antrozous pallidus*), silver-haired bat (*Lasionycteris noctivagans*), Yuma myotis (*Myotis yumanensis*), and Townsend's big-eared bat (*Corynorhinus townsendii*) are listed as “species of concern” by the U.S. Fish and Wildlife Service and as threatened or vulnerable species by the State of Oregon. These species are targets for a research study in summer 2003, which is being funded as part of this inventory effort. Biologists from the University of Idaho will use radiotelemetry techniques to locate summer maternity roosts, temporary night roosts, and sites of winter hibernation for the designated bat species of concern.

John Day Fossil Beds National Monument is an ideal area to focus bat conservation efforts for a number of reasons. The monument itself contains abundant natural and artificial structures that are well suited for both summer and winter use by bats. It also has as a primary management objective the conservation of natural and historical resources and is actively engaged in ecological restoration of riparian and upland vegetation, which bats rely on for roosting and foraging. Because the monument consists of three widely separated parcels of land that are situated within a matrix of federal and tribal lands, bat conservation within the monument can contribute to maintaining healthy bat populations in adjacent landscapes where natural resource conservation is a top management priority.

The 2002 bat inventory project, in combination with additional research in summer 2003, will give researchers critical information on roost locations and habitat characteristics. This knowledge will enable National Park Service staff to address the conservation needs of local bat populations. Information from the inventory and telemetry work can be used to direct monitoring and conservation activities at roosts. Potential disturbance from recreation, paleontology, prescribed burning, and other monument activities can also be minimized with information from this project. The success of the 2002 bat inventory illustrates how well the Natural Resource Challenge is enabling the National Park Service to take a leading role in the preservation of North American biodiversity. ■

Listed as a species of concern by the U.S. Fish and Wildlife Service, the pallid bat was one of 14 bat species inventoried at John Day Fossil Beds National Monument. The study and additional research in 2003 will give managers important information on roost locations and habitat characteristics for local bat populations.



COPYRIGHT ALAN D. ST. JOHN

lgarrett@uidaho.edu

Research Associate, Department of Fish and Wildlife Resources; University of Idaho, Moscow, Idaho